

# MATERIAL SAFETY DATA SHEET

DATE PREPARED: 02/28/1999

MSDS No: 6015

GroundClear™ Triox® Total Vegetation Killer A

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** GroundClear™ Triox® Total Vegetation Killer A  
**PRODUCT DESCRIPTION:** Herbicide

### MANUFACTURER

The SOLARIS Group  
of Monsanto Company  
P.O. Box 5008  
San Ramon, CA 94583-0808

### 24 HR. EMERGENCY TELEPHONE NUMBERS

Emergency Phone 800-225-2883

**EPA REG. NO.:** 239-2622B **PN:** 6004-F

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>Wt.%</u>	<u>CAS#</u>
Oxyfluorfen	0.7	42874-03-3
Imazapyr, isopropylamine salt	0.08	81510-83-0

## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Amber to yellow liquid.

**IMMEDIATE CONCERNS:** - CORROSIVE

- CAUSES IRREVERSIBLE EYE DAMAGE
- DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING
- PROLONGED OR FREQUENTLY REPEATED SKIN CONTACT MAY CAUSE

ALLERGIC  
REACTIONS IN SOME INDIVIDUALS  
- KEEP OUT OF REACH OF CHILDREN

## POTENTIAL HEALTH EFFECTS

**EYES:** This substance is a severe eye irritant and could cause permanent damage to your eyes and blindness. The degree of the injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment. Symptoms of overexposure may include discomfort, irritation and redness, and blurred vision. See Toxicological Information, section 11.

**SKIN:** This substance is a moderate skin irritant. Skin irritation may include discomfort, redness, swelling, and possibly blistering. If absorbed through the skin, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

**INGESTION:** If swallowed, this substance is considered practically non-toxic to internal organs. See Toxicology Information, section 11.

**INHALATION:** If inhaled, this substance is considered practically non-toxic to internal organs. See Toxicological Information, section 11.

**SENSITIZATION:** This product contains trace quantities of methylisothiazolinone and methylchlorisothiazolinone as preservatives. At higher concentrations these preservatives have been shown to cause allergic skin reactions in susceptible individuals. These preservatives are also found in a number of widely used personal care products, such as shampoos and cosmetics.

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## 4. FIRST AID MEASURES

**EYES:** IF IN EYES, hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

**SKIN:** If on skin, remove contaminated clothing, wash skin with plenty of soap and water. Wash contaminated clothing before reuse. If irritation persists, see a doctor.

**INGESTION:** If swallowed, immediately telephone a poison control center, emergency treatment center or a physician for advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container, with label, to an emergency treatment center.

**INHALATION:** If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.

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## 5. FIRE FIGHTING MEASURES

**FLASHPOINT AND METHOD:** 122°F TAG CC

**EXTINGUISHING MEDIA:** Alcohol Foam, CO<sub>2</sub>, Dry Chemical, Water Fog

**HAZARDOUS COMBUSTION PRODUCTS:** Heating this material (Acifluorfen component) may generate hydrogen chloride, hydrogen fluoride and nitrogen oxide.

**FIRE FIGHTING PROCEDURES:** This material will not burn. Smoke from fires involving this material may present unusual hazards. Avoid breathing smoke and mists. Avoid contact with fallout and runoff. Minimize the amount of water used for fire fighting. Foam fire-extinguishing system is preferred because uncontrolled water can spread contamination. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Read the entire document.

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## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Soak up spilled material with paper towels and discard in trash.

**LARGE SPILL:** Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgate, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

**GENERAL PROCEDURES:** Observe all protection and safety precautions when cleaning up spills -- see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 225-2883.

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## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** Keep pesticide in original container. Avoid contamination of feed and foodstuffs. Store in a secure cool, dry place. Do not store diluted spray.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits (see below). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design of exhaust systems.

### PERSONAL PROTECTION

**EYES AND FACE:** Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

**SKIN:** Wear appropriate protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type of glove for given application. Wash contaminated skin promptly. Launder contaminated clothing and clean protective equipment before reuse. Wash thoroughly after handling.

Attention! Repeated or prolonged contact may cause allergic skin reaction in some people.

**RESPIRATORY:** Avoid breathing vapor or mist. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposure limits are exceeded (see below). Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 C.F.R. 1910.134.

For application of product in accordance with label instructions, no special respiratory protection is required.

### OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

<u>Chemical Name</u>	<u>EXPOSURE LIMITS</u>		
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>ACGIH STEL</u>
Oxyfluorfen	None	None	None
Imazapyr, isopropylamine salt	None	None	None

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Liquid

**COLOR:** Amber to yellow liquid

**pH:** ~4.5 to 6.0

**BOILING POINT:** No Data Available

**FREEZING POINT:** No Data Available

**SOLUBILITY IN WATER:** Miscible with water.

**DENSITY:** 8.32 lb/gal at 20°C

**SPECIFIC GRAVITY:** 0.9971 at 20°C

**VISCOSITY:** Same as water.

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## 10. STABILITY AND REACTIVITY

**STABLE:** YES

**HAZARDOUS POLYMERIZATION:** NO

**HAZARDOUS DECOMPOSITION:** For Aciflourfen: HCL, HF, NO<sub>x</sub> during combustion.

**INCOMPATIBLE MATERIALS:** Avoid contact with strong oxidizing and reducing agents. Corrosive to mild steel and brass.

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## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**EYES:** Corrosive (irreversible destruction of ocular tissue); corneal involvement and irritation persisting for more than 21 days. EPA FIFRA Toxicity Category - I.

**DERMAL LD<sub>50</sub>:** Practically non-toxic, (Rat LD<sub>50</sub> >5000 mg/Kg). EPA FIFRA Toxicity Category - IV. Moderately irritating to skin (Rabbit). EPA FIFRA Toxicity Category - III.

**ORAL LD<sub>50</sub>:** Rat = > 5.0 g/kg.  
EPA FIFRA toxicity category - IV.

**INHALATION LC<sub>50</sub>:** If inhaled, this product is practically nontoxic. The 4-hour inhalation LC50 - rats >5 mg/l for the diluted product (36% in water). EPA FIFRA Toxicity Category - IV.

**SENSITIZATION:** Guinea pigs - skin sensitization response observed.

## **CARCINOGENICITY:**

**CARCINOGENICITY COMMENTS:** Oxyfluorfen (technical 70-75%): Chronic feeding studies:

Rats: No evidence of carcinogenicity. Mice: Male mice had an increased incidence of liver tumors only in the high dose group (200 ppm). No tumors observed in any of the female mice test groups. EPA classified Oxyfluorfen as a possible human carcinogen.

IMAZAPYR: Not a carcinogen based on the results of the chronic feeding studies in rats and mice. EPA classes imazapyr in Group E (no evidence of carcinogenicity in at least 2 adequate animal tests in different species.). Not listed as a human carcinogen by IARC, OSHA or NTP.

**TERATOGENICITY:** Oxyfluorfen (technical 70-75%): No evidence of teratogenic effects (birth defects). Not considered a teratogen in either rabbits or rats. Maternal toxicity associated with embryo-fetotoxicity and skeletal variations evident at 150 mg/kg/day dose levels in the rat study.

IMAZAPYR: Results of rat and rabbit teratology studies did not reveal any teratogenic or fetotoxic effects.

**REPRODUCTIVE TOXIN:** Oxyfluorfen (technical 70-75%): No evidence of adverse reproductive effects observed in a multigenerational rat feeding study (400 ppm highest dose).

IMAZAPYR: No data available.

**MUTAGENICITY:** Oxyfluorfen (technical 70-75%): Oxyfluorfen was positive in the Ames and mouse lymphoma point mutation studies and negative in the in vitro rat hepatocyte unscheduled DNA synthesis and the in vivo rat cytogenetic assay and mouse bone marrow cell chromosome aberration assay.

IMAZAPYR: Technical imazapyr is not considered a mutagen. Test results were negative re unscheduled DNA synthesis rat hepatocyte assay, in vitro Chinese hamster ovary (CHO)/hypoxanthine guanine phosphoribosyl transferase (HGPRT) mutation assay, bacterial/microsome reverse mutation (Ames) test and in vitro chromosomal aberrations in Chinese hamster ovary cells.

**COMMENTS:** See Section 16 for definition of EPA FIFRA toxicity categories.

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## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL DATA:** No data available.

**ECOTOXICOLOGICAL INFORMATION:** This material may be toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water.

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## 13. DISPOSAL CONSIDERATIONS

**FOR LARGE SPILLS:** Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.

**PRODUCT DISPOSAL:** The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

**EMPTY CONTAINER:** Do not reuse container. Rinse thoroughly before discarding in trash.

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## 14. TRANSPORT INFORMATION

### DOT (DEPARTMENT OF TRANSPORTATION)

**PROPER SHIPPING NAME:** Not Regulated

**PRIMARY HAZARD CLASS/DIVISION:** None

**UN/NA NUMBER:** NONE

**PACKING GROUP:** No

**U.S. SURFACE FREIGHT CLASS:** Tree or weed killing compounds, NOI, Density of 20 lbs. or greater per cu. ft.

### AIR (ICAO/IATA)

**PROPER SHIPPING NAME:** Not Regulated

**SPECIAL SHIPPING NOTES:** The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

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## 15. REGULATORY INFORMATION

### UNITED STATES

#### SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
ACUTE: YES	CHRONIC: NO	FIRE: NO	REACTIVITY: NO	PRESSURE GENERATING: NO

**313 REPORTABLE INGREDIENTS:** Oxyfluorfen (42874-03-3). De Minimis Concentration for Section 313 of EPCRA is 1.0%.

#### TSCA (TOXIC SUBSTANCE CONTROL ACT)

**TSCA REGULATORY:** All non FIFRA regulated components are on the US EPA's TSCA Inventory List.

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## 16. OTHER INFORMATION

### HMIS CODES

**FIRE: 2 HEALTH: 3 REACTIVITY: 0 PROTECTION: -**

### NFPA CODES

**FIRE: 2 HEALTH: 3 REACTIVITY: 0 SPECIAL: -**

**APPROVAL DATE:** 04/15/1999

**REVISION SUMMARY** Revision #: 2

This MSDS replaces the December 06, 1996 MSDS. Any changes in information are as follows:

In Section 1

Prepared By Date Prepared EPA Product Number



**MANUFACTURER SUPPLEMENTAL NOTES:** EPA FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) Toxicity Categories: The EPA toxicity categories are based on the results of the acute toxicology studies. The toxicology findings are compared to the FIFRA criteria to determine the product label signal word, precautionary and first aid statements. The EPA FIFRA toxicity category summary:

EPA FIFRA Product Label Toxicity Rating  
Toxicity Category Signal Word

I DANGER Most toxic and irritating  
II WARNING  
III CAUTION  
IV CAUTION Least toxic and irritating

**COMMENTS:** For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

**MANUFACTURER DISCLAIMER:** This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements under SARA Title III and many other laws. Emergency response agencies and health care providers will also find this additional information useful.

Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.